

IN THE CLAIMS

1-11. (cancelled)

12. (currently amended) The method of claim ~~11~~23, wherein the speed at which the vehicle stabilizes is less than or equal to 30 miles per hour.

13. (currently amended) The method of claim ~~11~~23, wherein the speed at which the vehicle stabilizes is less than or equal to 20 miles per hour.

14-17. (cancelled)

18. (withdrawn) A motor vehicle, comprising:

(a) a heat engine,

(b) at least one electric machine with a static energy converter, and

(c) a super-capacitor for supplying and storing energy, connected to the electric machine via a reversible DC-DC converter.

19. (withdrawn) The motor vehicle of claim 18, wherein said DC-DC converter comprises two transistors.

20. (withdrawn) The motor vehicle of claim 18, wherein said DC-DC converter comprises two resonance converters.

21. (withdrawn) The motor vehicle of claim 20, wherein the super-capacitor is connected between the two resonance converters.

22. (cancelled)

23. (new) A method for transmitting power to wheels of a motor vehicle with an internal-combustion engine and an electric machine connected to a static energy converter with terminals and at least one power semiconductor, the method comprising:

recuperating and storing kinetic energy of the motor vehicle in a super-capacitor;

shutting down the internal-combustion engine of the motor vehicle when the speed of the motor vehicle stabilizes;

using the stored energy in the super-capacitor to supply power to the wheels when the speed of the vehicle is stabilized; and

controlling voltage at the terminals of the static energy converter in order to keep the voltage substantially constant and near to a maximum value allowed by the at least one power semiconductor of the static energy converter.

24. (new) A method for transmitting power to wheels of a motor vehicle with an internal-combustion engine and an electric machine connected to a static energy converter with terminals and at least one power semiconductor, the method comprising:

recuperating and storing kinetic energy of the motor vehicle in a super-capacitor;

shutting down the internal-combustion engine of the motor vehicle when the speed of the motor vehicle stabilizes;

using the stored energy in the super-capacitor to supply power to the wheels when the speed of the vehicle is stabilized;

controlling voltage at the terminals of the static energy converter in order to keep the voltage substantially constant and near to a maximum value allowed by the at least one power semiconductor of the static energy converter; and

maintaining the voltage at the terminals of the static energy converter at a reference value  $U_{ref}$ , equal to:

$$U_{ref} = \text{MIN}[(U_1 - \lambda \cdot l), \text{MAX}(U_2, (U_3/k))]$$

where:  $U_1$  is a withstand voltage of the power semiconductors;

$\lambda \cdot l$  is an over-voltage at the terminals of the power semiconductors,  $l$  being a current passing through the electric machine;

$U_2$  is the difference between  $U_1$  and a maximum over-voltage at the terminals of the power semiconductors;

$U_3$  is the voltage at the terminals of the electric machine; and

$k$  is a constant coefficient referred to as the PWM coefficient (Pulse Width Modulation).

25. (new) A method for transmitting power to wheels of a motor vehicle with an internal-combustion engine and an electric machine connected to a static energy converter with terminals and at least one power semiconductor, the method comprising:

recuperating and storing kinetic energy of the motor vehicle in a super-capacitor;

shutting down the internal-combustion engine of the motor vehicle when the speed of the motor vehicle stabilizes;

using the stored energy in the super-capacitor to supply power to the wheels when the speed of the vehicle is stabilized;

controlling voltage at the terminals of the static energy converter in order to keep the voltage substantially constant and near to a maximum value allowed by the at least one power semiconductor of the static energy converter; and

keeping the voltage at the terminals of the static energy converter between two limit values, the first corresponding to  $U_2$  and the second corresponding to  $(U_1 - \lambda \cdot l)$ , where:

$U_1$  is a withstand voltage of the power semiconductor;

$\lambda.l$  is an over-voltage at the terminals of the power semiconductors,  $l$  being the current passing through the electric machine; and

$U_2$  is the difference between  $U_1$  and the maximum over-voltage at the semiconductors.

26. (new) A method for transmitting power to wheels of a motor vehicle with an internal-combustion engine and an electric machine connected to a static energy converter with terminals and at least one power semiconductor, the method comprising:

recuperating and storing kinetic energy of the motor vehicle in a super-capacitor;

shutting down the internal-combustion engine of the motor vehicle when the speed of the motor vehicle stabilizes;

using the stored energy in the super-capacitor to supply power to the wheels when the speed of the vehicle is stabilized;

controlling voltage at the terminals of the static energy converter in order to keep the voltage substantially constant and near to a maximum value allowed by the at least one power semiconductor of the static energy converter; and

maintaining the voltage at the terminals of the static energy converter at a reference value  $U_{ref}$ , equal to:

$$U_{ref} = \text{MIN}[(U_1 - \lambda.l); \text{MAX}(U_2; (U_3/k))]$$

where:  $U_1$  is a withstand voltage of the power semiconductors;

$\lambda.l$  is an over-voltage at the terminals of the power semiconductors,  $l$  being a current passing through the electric machine;

$U_2$  is the difference between  $U_1$  and a maximum over-voltage at the terminals of the power semiconductors;

$U_3$  is the voltage at the terminals of the electric machine; and

$k$  is a constant coefficient referred to as the PWM coefficient (Pulse Width Modulation);

wherein controlling the voltage at the terminals further comprises keeping the voltage at  $U_2$ , that being the difference between  $U_1$ , the withstand voltage of the power semiconductors, and the maximum over-voltage at the terminals of the semiconductors.